DPD-1283-59
COPY 1 OF 1

25X1

16 February 1959

25X1 [redacted]

In response to your request for some notes on our conversation on Configuration C, I am enclosing a copy of my memo to

25X1 [redacted] This is for your reference only.

We will be glad to discuss this with you at your convenience.

[redacted]

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25X1 [redacted]

DOCUMENT NO. _____
NO CHANGE IN CLASS. ☐
DECLASSIFIED
CLASS. CHANGED TO: TS (S) C
NEXT REVIEW DATE: 2011
AUTH: HR 70-2
DATE: 8/5/81 REVIEWER: [redacted]

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11 February 1959

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To:

From:

Subject: Work Statement for Hycon Funded Work on Configuration C.

Lab Check

Electromechanical operation of C #4 will be carefully checked to insure proper condition. Optical quality of the system will be carefully checked to insure there has been no degradation subsequent to the last flight test in which suitable quality pictures were obtained.

The solenoid flexure design will be examined and revised if necessary to limit susceptibility to vibration.

Simulated Flight Tests

If the lab check indicates the camera is in good condition, several ground tests will be run with the Configuration on the rocking table to simulate flight test. Operation of

Stabilizer

Position Servo

IMC

Film Drive

Shutter

Programmer

Autobalance

Heaters

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will be monitored to determine if they are operating with tolerance.

Flight Test

If above tests indicate that functional operation and optical quality are satisfactory, several flight tests will be scheduled. By the third flight, altitude focus will be established and the fourth flight will indicate the quality and consistency of results to be obtained.

Results

It is expected that photo quality of the take will be equivalent to that obtained in July 1958. It is expected reliability will be on the order of 70% of the scheduled take or better.

Uncertainties

1. Photo Quality: It has not been demonstrated that Photo Quality will be sustained throughout a full length flight. It is known that Photo quality is sustained for at least 2 hours of flight. The effect of temperature variations on focus has only been partially defined and, therefore, equipment bay temperatures need to be as stable and repeatable as possible. Tests proposed above will indicate if photo quality can be sustained throughout the entire flight.

2. Source of the IMC error noted in previous flight test results has not been found. Examination of design and operation of the IMC drive indicates that IMC error of the camera is well below that noted in the results. The compatability of the Hand Control camera operation will be examined and the accuracy of the pilots IMC setting on the hand control will be checked. When the source of the IMC error is found, a proposal for correcting it can be made.

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3. The requirement for autobalance is marginal. The camera will operate for 1 1/2 hours or more without autobalance corrections. By utilizing the autobalance and with careful control of film loads, the camera will operate satisfactorily at least up to the last 30 minutes of flight. The tests proposed above will add data for the determination of the necessity and the reliability of the autobalance.

4. Component Reliability: It is believed that the proposed tests will provide an indication of the reliability of various components.

Recommendations

It is recommended that Hycon request that C #4 and necessary test and ground support equipment be assigned to Plant #9 on bailment. It is recommended that Hycon at its own expense perform the lab check and simulated flight tests described above. If results prove satisfactory, it is recommended that Hycon request the customer permit use of the existing facilities at the test site and make flight time available for accomplishing the proposed flight tests. If possible, flight tests should be incorporated into scheduled pilot proficiency or aircraft checkout flights so that the customer will incur no additional expense.

It is, I believe, in Hycon's best interest to undertake the recommended program. My reasons are as follows:

1. The customer is, to say the least, dissatisfied with the outcome of the program. We cannot afford to have a dissatisfied customer.

2. The prime contractor issued a final report which said Hycon is all to blame. Since this is not so we should not sit idly back while the prime contractor kicks us to death.

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3. No amount of talk or discussion will convince the customer the C Configuration can be successfully completed, only good performance will.

B Systems

A - Changing windows as shown in Hatch 1, SN6, System 6 at B will bring this hatch up to good condition.

B - This hatch 2(353)(F210) at C needs three windows changed as shown.

C - Changing one window in hatch (353)(F240) System 6 at C is suggested.

D - One window in 5, System 6 at B might well be replaced.

E - Three windows in hatch 3 at B might well be replaced.

These changes will result in first rate hatches at B numbered:

1 - SN6 System 6
5 System 6
3
4

The other two hatches, 11 and 22, have coating sleeks which should not degrade photography to any observable extent.

C Systems

At C the hatches numbered:

(353)(F240) System 6
2(353)(F210)

would be improved, and hatches:

16(359)(F210)
3(378)(F240) System 6

are at present acceptable.

These changes would leave:

2 type C
3 type D
3 type E
2 type F

windows in stock for emergency replacements.

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A Systems

F - There is one type A hatch at B-to bring it up to good condition would require both A type windows.

Since at C there are two A-2 hatches judged "all ok" no further replacements are recommended.

Window Type	Number in Stock	Where Used	Hatch No. & Type	Location	Window Location	Remarks on Window Condition	
A	2	A-1) rt.& A-2) lft.	A2	B	Back rt.	Bad sleeks	F
					Front lft.	Long scratch	F
			(378)(F210)A1	C	Front rt.	Scratch	
					Back lft.	Deep scratch & bad coat	
					Front lft.	Bad coat	
			11(353)F151A2	C	All (4)	Bad coats	
			359 F151 A2	C	Bad rt.	Bad dig	
B	2	A-1) A-2) ct.	(378)(F210)A1	C	Center	Deep dig	
			11(353)(F151)A2	C	Center	Deep dig	
C	3	B center	3 B	B	Center	Several bad scratches	E
D	6	B-1L&1R	3 B	B	1L	Several long scratches	E
			2(353)(F210) B	C	1L	One deep scratch	B
			(353)(F240)Sy.6	C	1R	One light scratch	C
E	6	B-2L&2R	1-SN6-Sy.6	B	2L	Several short scratches	A
			5- Sy.6	B	2R	Sleeks	D
			22	B	2L	Badly sleeked	
			2(353)(F210)	C	2R	2 deep scratches 1" long	B
F	6	B-3L&3R	11	B	3L	Bad coating	
				B	3R	Bad Coating	
			3	B	3R	Short scratch	E
			1-SN6-Sy.6	B	3R	Many short deep scratches	A
					3L	Many short deep scratches	A
			22	B	3L	Badly sleeked	
					3R	Badly sleeked	
			2(353)(F210)	C	3L	Coating bad	B